

ABSTRACT OF DISCLOSURE

A semiconductor device having a trench capacitor is disclosed. The trench is formed on the surface of a semiconductor substrate. A first insulating film is formed on the side wall of the trench and a semiconductor
5 film is buried in the trench. The first insulating film and the semiconductor film located in the upper part of the trench are etched and a second insulating film is deposited on the exposed side wall. The semiconductor film and the first insulating film are etched and a plate electrode is formed on the exposed side wall. A capacitor insulating film is
10 formed on the plate electrode and a storage electrode is buried within the trench. The structure provides a semiconductor device having fewer memory cell defects.